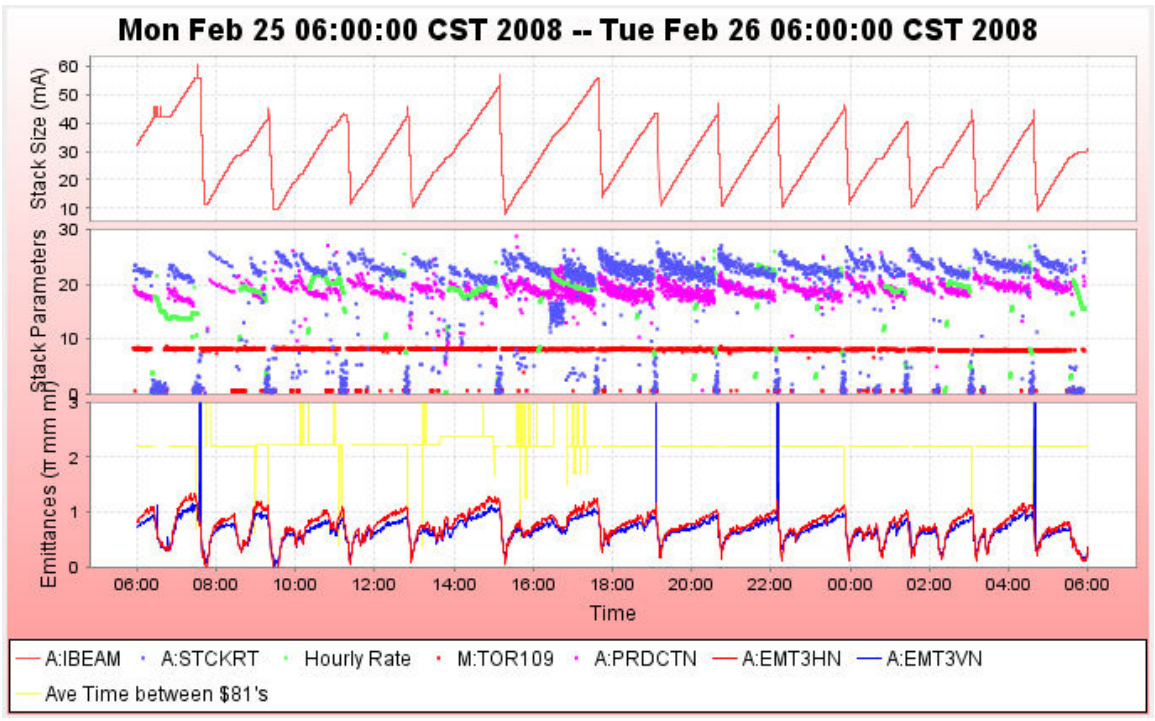
2008-02-26 Tuesday Morning Pbar Notes

Monday, February 25, 2008
7:22 PM

Stacking

- Continue to run at 10 turns, with protons on target dropping from 7.6e12 to 7.4e12.
- Best stacking hour was 23.01mA/hr, which is down a good 1.5mA/hr. Some of this is due to the decreased beam on target, but much of it is something in Pbar.
- Average production was 17.09 e-6/proton.
- DRF1-6 was getting cranky again. On the evening shift, ops raised the driver current POT from 5.9 to 6.0.
- A:STCKAV is broke (calculated on MICALC) is broke.
- After working with MI experts is was decided to leave the MI vertical position as is. I had noted that the vertical position coming out of the main injector was different on the $29 events as compared to the $23 events. The overthruster is currently keeping up with changes, so we will not ask MI to make any changes yet.
- During tuning efforts the Accumulator vertical damper movable stand got stuck in a position that is not centered. Experts are looking at this in hopes of getting it to move from upstairs. If it is indeed stuck, this will only have a small impact. We should see little performance differences. But when unstacking or if we have to go to large stacks, the damper amplifiers will have to work harder than normal.
- FESS reported that leaks in 14 tubes were fixed on shell and tube heat exchanger HX8. They should be finishing up work today and will ask to switch over from the plate and frame heat exchanger (primary) HE8 to the shell and tube (backup) HX8 on Thursday. We will want to do this after a set of transfers.



Transfers

- Unstacked 449mA to the Recycler in 40 transfers over 13 sets.
  - Accumulator to MI efficiency 97%
  - Accumulator to RR efficiency was 91.9%
- Transfer 7260 had an interesting problem.

- The sequencer was being held up by A:SPIKE, which is a parameter that watches for coherent spikes on the VSA display.
- Ops restarted the VSA and the sequencer continued with the unstacking commands.
- Only 3mA were taken out on that transfer.
- We initially thought that the VSA problems resulted in the marker frequency having the wrong core frequency. In that case the RF would try to capture beam from the wrong place, resulting in a small transfer.
- Further inspection showed that this was not the case. The VSA had the correct frequency. Instead the RF voltage was small, resulting in a smaller bucket…thus taking out less.

Column 1 Number_0_Pbar	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled	Column 22 Number_21_A:IB	Unstacked (mA)	Column 23 Number_22_R:BE	Column 24 Number_23_R:BE	Stashed	Acc to RR Eff	Column 27 Number_26_MI	Column 28 Number_27_MI Before	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets
		7:00:00 AM			448.802			412.27	91.86%	435.899	435.082	97.13%	96.94%	40	13
7270	Tuesday, February 26, 2008	4:37:36 AM	40.988	9.188	31.800	217.448	246.557	29.11	91.54%	30.739	30.426	96.66%	95.68%	3	1
7269	Tuesday, February 26, 2008	3:06:03 AM	40.988	9.988	31.000	189.121	217.993	28.87	93.14%	30.263	30.608	97.62%	98.74%	3	1
7268	Tuesday, February 26, 2008	1:27:34 AM	40.788	10.388	30.400	161.401	189.498	28.10	92.42%	29.813	29.653	98.07%	97.54%	3	1
7267	Monday, February 25, 2008	11:52:20 PM	44.988	11.988	33.000	131.397	161.784	30.39	92.08%	32.063	32.085	97.16%	97.23%	3	1
7266	Monday, February 25, 2008	10:11:28 PM	42.387	10.588	31.799	102.510	131.693	29.18	91.77%	30.825	30.891	96.94%	97.14%	3	1
7265	Monday, February 25, 2008	8:39:58 PM	43.188	10.788	32.400	73.007	102.624	29.62	91.41%	31.069	31.119	95.89%	96.05%	3	1
7264	Monday, February 25, 2008	7:07:05 PM	43.788	10.987	32.801	43.127	73.235	30.11	91.79%	31.832	31.789	97.05%	96.91%	3	1
7263	Monday, February 25, 2008	5:38:49 PM	55.788	14.188	41.600	6.253	43.561	37.31	89.68%	39.694	39.681	95.42%	95.39%	3	1
7262	Monday, February 25, 2008	3:09:52 PM	52.988	8.388	44.600	211.059	250.658	39.60	88.79%	43.109	43.482	96.66%	97.49%	4	1
7261	Monday, February 25, 2008	12:50:53 PM	42.188	10.788	31.400	182.285	211.546	29.26	93.19%	30.943	30.658	98.54%	97.64%	3	1
7260	Monday, February 25, 2008	11:17:50 AM	42.988	11.587	31.401	153.338	182.655	29.32	93.36%	30.625	30.487	97.53%	97.09%	3	1
7259	Monday, February 25, 2008	9:20:11 AM	41.588	9.588	32.000	124.006	153.876	29.87	93.34%	31.224	30.827	97.58%	96.33%	3	1
7258	Monday, February 25, 2008	7:36:18 AM	56.188	11.587	44.601	82.742	124.288	41.55	93.15%	43.700	43.376	97.98%	97.25%	3	1

Requests and Plan for Today

- Continue to tune-up on stacking.

Other

- Paul's Numbers
  - Most in an hour: 23.01 mA at Tue Feb 26 04:27:40 CST 2008
  - Best: 25.19 mA on 30-Jan-08
  - Average Production 17.09 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
  - Average Protons on Target 6.84 e12 Best: 8.77 e12 on 07/24/2007
  - Largest Stack .00 mA Best: 313.58 mA on 02/18/2008
- Al's Numbers
  - Stacking
    - Pbars stacked: 444.57 E10
    - Time stacking: 22.01 Hr
    - Average stacking rate: 20.20 E10/Hr
  - Uptime

Uptime
- Number of pulses while in stacking mode: 35343
- Number of pulses with beam: 32276
- Fraction of up pulses was: 91.32%

- The uptime's effect on the stacking numbers
  - Corrected time stacking: 20.10 Hr
  - Possible average stacking rate: 22.12 E10/Hr
  - Could have stacked: 486.82 E10/Hr

- Recycler Transfers
  - Pbars sent to the Recycler: 446.17 E10
  - Number of transfers : 41
  - Number of transfer sets: 14
  - Average Number of transfer per set: 2.93
  - Time taken to shoot: 01.99 Hr
  - Time per set of transfers: 08.52 min
  - Transfer efficiency: 97.15%

- Other Info
  - Average POT : 7.53 E12
  - Average production: 18.28 pbars/E6 protons